

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number
WO 2005/061347 A1

(51) International Patent Classification⁷: **B65D 88/26**,
88/54, B65G 47/19

(21) International Application Number:
PCT/NZ2004/000337

(22) International Filing Date:
23 December 2004 (23.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
530388 23 December 2003 (23.12.2003) NZ

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SCHWASS, Trevor,**
Douglas, Anthony [NZ/NZ]; 3 Nilgiri Road, Napier (NZ).

(74) Agent: **SCHUCH, Ernest, Robert;** Schuch & Company,
P.O. Box 10 615, Level 5, 22 The Terrace, Wellington (NZ).

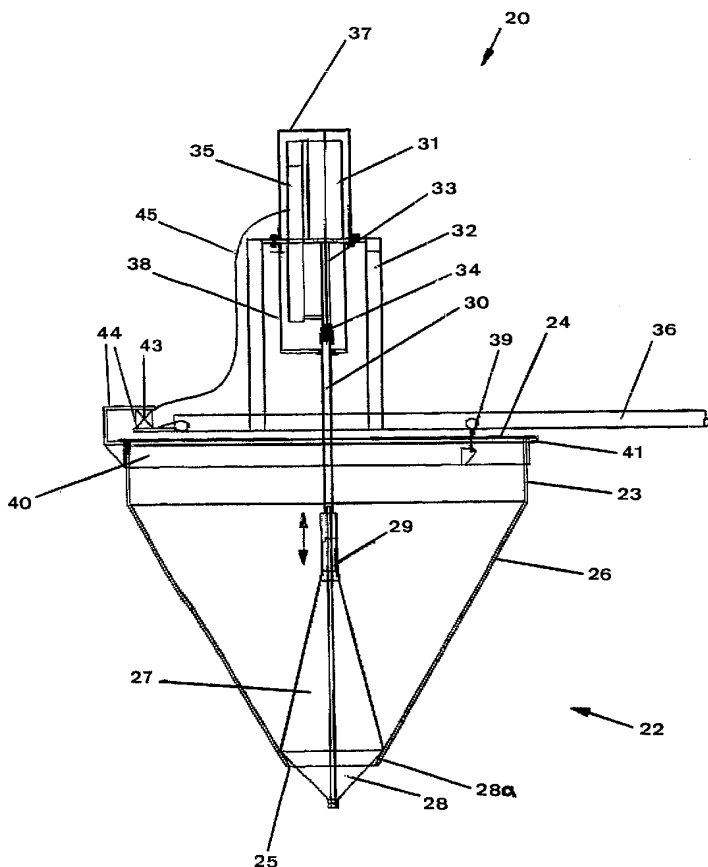
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(71) Applicant (for all designated States except US): **DSH**
SYSTEMS LIMITED [NZ/NZ]; 3 Nilgiri Road, Napier
(NZ).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: MATERIAL DISCHARGE APPARATUS AND METHOD



(57) Abstract: This invention relates to a material discharge apparatus (1), method and computer program for controlling the flow rate of flowable material being conveyed through a hopper (2), the apparatus (1) including a hopper (2) having an inlet opening (4) at the top and a discharge outlet (5) at the base of the hopper (2), and a valve means (7) configured and arranged in the hopper, the valve means (7) having a lower end portion adjacent the discharge outlet (5) forming a gap between the hopper and the valve means for material to flow therethrough, the valve means and/or the hopper being adapted to move relative to the other, in use, for controlling the rate of discharge of material through the gap.



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*